



SBIR

Success Stories

Small Business Innovation Research (SBIR)

INSECTICIDAL ACTIVITY OF SUGAR ESTERS

AVACHEM Joint Venture

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INNOVATION

A new class of pesticides based on esters of sugar and fatty acids that degrade rapidly and are not harmful to wildlife and other non-target organisms.

ACCOMPLISHMENTS

- ▶ Developed two active ingredients (sucrose octanoate esters and sorbitol octanoate) which have received EPA pesticide registration.
- ▶ Generated two U.S. patent applications covering the manufacture and use of the active ingredients referred to above.
- ▶ Petition filed with the USDA National Organic Standards Board (NOSB) to have sucrose octanoate esters approved for use in organic agriculture.



**ONE OF THE FEW PESTICIDES ABLE TO EFFECTIVELY CONTROL
VARROA MITES ON HONEY BEES**

COMMERCIALIZATION

- ▶ The first commercial sugar ester pesticide product, Sucroside™, was introduced in January, 2004 and is distributed by Dadant & Sons, Inc., (www.dadant.com/catalog).
- ▶ McLaughlin Gormley King Company (MGK), Minneapolis, MN, is developing commercial products based on the sugar ester active ingredients for selected organic agriculture applications and for the home and garden market.

IMPACTS

- ▶ Sucroside™ offers a safe, effective treatment for Varroa mites for the nation's beekeepers, and their 2 million honey bee colonies, at a time when the mites are spreading to more colonies and becoming resistant to the established treatments.
- ▶ Assuming the NOSB approves the petition to allow sucrose octanoate esters in organic agriculture, organic farmers will be provided with a product that will supplement the limited number of control methods currently available.
- ▶ In conjunction with MGK, the development of consumer products will provide safe pest control methods for use in and around the house and in home gardens.

**SBIR COMPETITIVELY AWARDS SMALL BUSINESS GRANTS FOR INNOVATIVE RESEARCH THAT HAS THE
POTENTIAL OF SOLVING IMPORTANT AGRICULTURE AND RURAL DEVELOPMENT PROBLEMS.**